

UNITED STATES NAVAL OBSERVATORY
CIRCULAR NO. 15

U. S. Naval Observatory, Washington 25, D. C.

April 12, 1950

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS
JANUARY-FEBRUARY, 1950

By Lucy T. Day

These results are based upon measurements made at the Naval Observatory on plates secured either there or at the Mt. Wilson Observatory. The symbols used for the entries in the successive columns are as follows:

U.T., the epoch of observation in Universal Time.

No., the identifying number of the group assigned by Mt. Wilson.

Δl , the heliographic difference in longitude from the central meridian, measured positive to the west.

φ , the heliographic latitude, measured positive to the north.

ρ , the heliocentric angular distance from the line joining the centers of the Earth and Sun.

A , the true area of the umbra plus penumbra, expressed in millionths of the visible hemisphere.

s , the number of spots.

An asterisk means that no Mt. Wilson number was assigned. Plates secured at the Naval Observatory are indicated by N, and those at Mt. Wilson by W. The plate quality, which follows, is indicated by:

1, Poor; 2, Fair; 3, Good; 4, Very Good; 5, Excellent.

The following five quantities are listed successively at the end of each day, and give for that day:

1. The total number of groups, g .
2. The longitude of the central meridian, L_0 .
3. The latitude of the center of the disc, B_0 .
4. The total value of A .
5. The total value of s .

The mean daily area and the mean relative sunspot number, $r=10g+s$ are given at the end of the month.

These results are a continuation of those published in the *Monthly Weather Review* from February 1, 1927 to December 31, 1947.

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s	
		°	°	°					°	°	°			
1.766	10185	-16	+ 7	20	109	6		10180	+63	+22	68	121	2	
N-4	10185	-14	+ 6	16	36	6		10180	+70	+22	73	388	2	
	10185	-12	+ 6	14	170	2		10180	+76	+21	77	194	2	
	10181	-15	+ 5	18	109	3		(7) (142) (-4)				1212	18	
	10180	+10	+23	28	170	23								
	10180	+15	+23	31	679	20		6.643	10189	-53	+ 9	54	242	13
	10180	+20	+22	32	97	13	N-2	10191	-43	+13	46	73	6	
	10177	+31	+23	40	194	1		10191	-40	+12	43	73	10	
	10186	+59	+12	61	12	2		10187	-41	-11	41	12	1	
	10175	+69	+14	69	12	3		10187	-38	-13	39	48	1	
	10175	+79	+12	79	436	1		10181	+50	+ 4	51	73	3	
	(6) (194) (-3)				2024	80		10188	+51	+11	55	16	1	
								10185	+54	+ 5	56	121	2	
2.694	10185	- 4	+ 7	11	97	5		10180	+80	+22	80	145	1	
N-3	10185	- 2	+ 6	9	24	4		(7) (130) (-4)				803	38	
	10185	+ 1	+ 6	9	97	1								
	10181	- 3	+ 5	9	109	3		7.694	10192	-71	- 4	71	48	1
	10180	+22	+23	35	145	16	N-3	10189	-40	+ 7	43	48	10	
	10180	+24	+21	35	61	2		10189	-37	+ 8	40	194	11	
	10180	+27	+23	37	582	15		10191	-30	+13	34	121	5	
	10180	+33	+21	40	24	2		10191	-27	+12	32	194	7	
	10180	+35	+21	42	121	1		10187	-25	-13	27	12	1	
	10177	+43	+24	50	194	1		10193	+31	+19	38	48	4	
	(4) (182) (-3)				1454	50		10151	+64	+ 5	65	12	2	
								10185	+69	+ 6	70	145	1	
3.720	10187	-78	-12	78	121	1		(7) (116) (-4)				822	42	
W-1	10185	+11	+ 7	15	48	7								
	10185	+15	+ 6	17	145	1		8.681	10192	-59	- 4	59	48	1
	10181	+11	+ 5	15	109	2	N-2	10189	-27	+ 7	30	121	1	
	10188	+12	+12	19	12	2		10189	-23	+ 7	25	121	3	
	10180	+37	+23	45	97	3		10191	-15	+13	22	97	3	
	10180	+40	+22	46	194	4		10191	-13	+12	21	218	1	
	10180	+45	+22	51	436	6		(*)	- 7	+12	18	24	4	
	10180	+49	+21	53	206	1		10181	+76	+ 5	77	12	1	
	10177	+57	+24	61	145	1		10185	+81	+ 6	81	97	1	
	(6) (169) (-3)				1513	28		(6) (103) (-4)				738	15	
4.663	10187	-64	-12	65	121	1		9.729	10192	-45	- 4	45	36	2
N-2	10185	+20	+ 6	22	12	1	N-3	10189	-13	+ 8	18	48	4	
	10185	+23	+ 7	25	73	6		10189	- 9	+ 9	15	48	3	
	10185	+28	+ 7	30	121	1		10191	- 2	+13	16	194	2	
	10181	+24	+ 5	25	242	3		10191	+ 1	+12	15	218	1	
	10188	+25	+13	30	48	2		10194	+11	+12	19	61	2	
	10188	+27	+12	31	48	2		10194	+13	+12	21	36	3	
	10180	+51	+23	57	291	7		(4) (89) (-4)				641	17	
	10180	+55	+23	60	436	5								
	10180	+61	+22	65	145	1		10.644	(*)	-49	- 2	49	12	4
	10177	+70	+24	72	145	1	N-3	10195	-43	+ 9	45	24	7	
	(6) (156) (-3)				1682	30		10195	-41	+ 7	43	12	2	
								10192	-31	- 4	31	12	1	
5.707	10189	-66	+ 9	67	170	4		10189	+ 1	+ 8	12	24	3	
W-1	10187	-50	-12	50	97	1		10189	+ 5	+ 9	13	24	5	
	10190	-13	+20	27	24	3		10191	+11	+14	22	12	1	
	10181	+37	+ 5	38	97	1		10191	+14	+13	23	242	7	
	10188	+39	+11	42	48	2		10194	+24	+12	29	73	4	
	10185	+41	+ 7	42	73	1								

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s	
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$			
	10194	+28	+12	32	24	9		10201	-44	+7	45	36	1	
	10194	+29	+12	32	48	1		(*)	-44	+15	49	12	1	
	(6)	(77)	(-4)		507	44		10200	-36	-7	36	291	1	
11.662	10195	-29	+9	32	12	1		10205	-35	+15	40	24	1	
N-3	10195	-27	+7	30	48	1		10205	-30	+15	36	97	7	
	10192	-18	-4	18	24	1		10199	-9	+15	23	48	4	
	10189	+19	+9	22	48	5		10199	-5	+15	21	48	3	
	10191	+25	+14	30	24	7		10197	+30	+14	35	48	2	
	10191	+27	+13	32	194	5		(8)	(343)	(-5)		1101	22	
	10194	+37	+13	41	145	1		18.668	10206	-59	+11	59	436	1
	10194	+40	+13	43	24	9		N-1	10202	-39	+20	46	48	1
	10194	+43	+12	45	121	1			10201	-32	+7	33	36	1
	(5)	(64)	(-4)		640	31			10200	-23	-8	23	388	1
13.747	10196	-45	-13	46	12	6			10205	-21	+16	30	145	3
W-2	10196	-42	-10	42	24	13			10205	-16	+15	27	218	5
	10195	-1	+5	9	12	2			10199	+4	+16	22	73	4
	10195	+1	+7	11	36	4			10199	+7	+16	23	121	3
	10195	+3	+6	10	48	5			10197	+40	+14	44	73	1
	10189	+47	+8	49	48	9			10197	+45	+13	48	73	1
	10189	+49	+10	51	61	10		(7)	(332)	(-5)		1611	21	
	10191	+56	+13	58	170	2		19.887	10208	-72	+11	73	194	2
	10194	+67	+13	69	242	12		W-3	10208	-69	+7	69	12	1
	10194	+71	+11	73	291	2			10208	-67	+8	67	145	2
	(5)	(36)	(-4)		944	65			(*)	-51	+13	54	24	5
15.676	10201	-75	+6	76	97	1			10206	-43	+10	45	291	1
N-2	10200	-63	-8	63	388	1			10202	-24	+20	35	12	1
	10199	-36	+17	42	6	2			10209	-21	-12	22	48	10
	10198	-20	-13	22	36	1			10201	-17	+7	21	24	1
	10197	+3	+14	20	36	1			10200	-11	-10	12	48	12
	10195	+25	+7	28	97	6			10200	-9	-9	10	267	1
	10195	+29	+7	32	61	3			10205	-4	+15	20	194	26
	10189	+70	+9	71	73	1			10205	+1	+15	20	218	2
	10189	+75	+10	77	97	1			10199	+20	+16	28	73	10
	10191	+81	+13	81	242	1			10199	+23	+16	30	36	6
	(8)	(11)	(-5)		1133	18			10199	+27	+16	34	61	4
16.665	10202	-64	+21	69	16	1			10197	+57	+15	60	145	7
W-2	10201	-60	+7	62	73	2			10197	+60	+13	63	73	6
	10200	-50	-8	50	291	1		(10)	(316)	(-5)		1865	97	
	10205	-50	+16	53	36	2		20.658	10208	-61	+11	63	291	1
	10205	-48	+14	52	12	2		N-3	10208	-55	+8	57	339	1
	10204	-37	-12	38	12	1			10210	-54	+4	55	73	4
	10199	-24	+17	33	24	2			10206	-32	+10	35	436	1
	10199	-20	+17	30	48	2			10202	-14	+20	28	12	3
	10203	+12	-1	12	12	2			10209	-9	-11	11	97	10
	10197	+16	+14	24	24	3			10200	0	-10	5	73	8
	10195	+40	+6	42	48	9			10200	+2	-8	3	267	1
	(9)	(358)	(-5)		596	27			10205	+7	+16	22	291	17
17.785	10206	-71	+10	72	485	1			10205	+13	+16	25	315	2
N-1	10202	-51	+20	56	12	1			10199	+35	+17	41	388	9
									10197	+68	+16	70	194	1
									10197	+70	+15	72	97	5
								(9)	(305)	(-5)		2873	63	

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U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
21.662	10211	-77	+21	77	436	5	24.689	10217	-70	+2	70	12	2
N-2	10208	-48	+12	51	194	1	N-3	10217	-67	+7	68	24	7
	10208	-42	+10	44	24	2		10217	-65	+3	66	48	3
	10208	-40	+9	42	145	2		10216	-63	+14	66	97	1
	10210	-40	+5	41	73	6		10216	-62	+15	65	73	3
	10206	-19	+11	24	339	1		10212	-48	+10	51	24	6
	10206	-19	+16	27	6	1		10212	-43	+9	46	48	1
	10209	+2	-13	8	121	9		10211	-37	+20	44	218	8
	10209	+6	-11	8	73	18		10211	-35	+21	43	48	1
	10200	+16	-8	17	242	1		10211	-33	+21	42	485	2
	10205	+19	+17	28	145	12		10208	-8	+13	20	97	5
	10205	+22	+16	30	36	4		10208	-7	+11	18	61	6
	10205	+28	+17	35	485	1		10208	0	+10	15	218	9
	10199	+48	+17	52	73	5		10210	+4	+5	10	12	1
	10199	+54	+16	57	291	3		10206	+20	+10	33	218	2
	(8)	(292)	(-5)		2683	71		10215	+39	+20	46	12	3
22.723	10212	-75	+9	76	97	2		10209	+42	-12	43	170	6
W-3	10212	-70	+8	71	97	1		10209	+48	-11	48	61	10
	10211	-63	+20	68	145	1		10214	+49	+17	52	48	5
	10211	-59	+21	63	436	4		10200	+56	-8	56	267	1
	10208	-35	+13	40	194	1		10205	+59	+17	62	97	1
	10208	-32	+9	34	24	10		10205	+67	+17	70	436	1
	10208	-28	+9	32	145	20		(12)	(252)	(-5)		2774	84
	10210	-26	+4	28	73	6	25.656	10217	-60	+2	61	36	3
	10206	-9	+12	19	12	8	N-4	10217	-57	+2	59	48	4
	10206	-5	+11	17	291	1		10217	-53	+4	55	48	6
	10209	+17	-13	20	170	18		10217	-51	+2	53	61	2
	10209	+21	-11	22	145	15		10216	-51	+13	55	61	9
	10200	+31	-9	31	267	1		10216	-49	+12	52	194	1
	10205	+35	+15	40	388	16		10212	-40	+7	43	24	8
	10205	+40	+15	45	436	1		10212	-31	+8	34	36	7
	10199	+61	+17	65	48	5		10212	-29	+9	32	48	1
	10199	+69	+16	70	291	1		10211	-24	+20	36	291	10
	(9)	(278)	(-5)		3259	111		10211	-21	+20	34	388	3
23.638	10216	-75	+16	77	48	1		10211	-19	+20	32	12	6
N-2	10212	-62	+10	65	73	1		10218	-11	-12	12	61	6
	10212	-58	+9	60	97	1		10208	+3	+14	20	97	5
	10211	-50	+20	55	291	1		10208	+7	+12	19	36	15
	10211	-48	+21	53	48	1		10208	+12	+10	20	339	9
	10211	-46	+20	52	485	1		10206	+32	+10	36	145	2
	10208	-21	+12	27	194	2		10215	+51	+21	59	145	7
	10208	-18	+10	23	73	6		10209	+55	-11	55	291	7
	10208	-13	+10	20	291	4		10214	+59	+17	63	145	7
	10210	-12	+5	15	61	2		10214	+64	+17	70	194	1
	10206	+2	+12	17	48	3		10200	+68	-8	68	267	1
	10206	+8	+11	18	291	2		10205	+79	+17	79	339	2
	10215	+24	+20	34	61	1		(12)	(240)	(-6)		3306	122
	10209	+29	-12	30	242	5	26.658	10217	-47	+2	49	12	1
	10209	+33	-11	33	145	4	N-3	10217	-43	+2	44	12	4
	10200	+42	-8	42	291	1		10217	-39	+3	41	61	2
	10205	+47	+16	51	97	2		10216	-38	+13	43	48	6
	10205	+54	+17	57	436	1		10216	-35	+11	40	145	2
	10199	+82	+17	82	194	2		10212	-19	+9	24	24	4
	(11)	(266)	(-5)		3466	41		10212	-16	+8	22	73	6
								(*)	-17	+19	31	12	3

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U. T.	No.	Δl	φ	ρ	A	s	U. T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
7.873	10227	-80	+18	80	242	1		10230	-26	-9	26	194	1
N-2	10223	+32	+13	37	48	2		10229	+1	-18	11	291	10
	10223	+34	+15	40	48	1		10229	+5	-19	13	48	3
	(2)	(66)	(-6)		338	4		10229	+12	-17	16	582	2
								10227	+12	+18	28	194	1
8.653	10227	-69	+18	73	242	1		10236	+48	-19	48	97	9
N-3	10223	+43	+13	48	36	1		10236	+50	-18	50	194	1
	10223	+46	+16	52	24	6		10232	+76	+12	76	48	1
	(2)	(55)	(-6)		302	8		10232	+80	+10	80	48	1
								(9)	(335)	(-7)		4362	41
9.760	10227	-54	+18	60	242	1	15.698	10233	-70	+7	70	24	5
N-1	10228	-37	+17	45	12	1	N-4	10233	-67	+11	68	873	1
	10223	+58	+13	61	24	1		10233	-62	+12	64	242	5
	10223	+62	+15	66	48	3		10233	-61	+8	63	194	7
	(3)	(41)	(-7)		326	6		10233	-57	+11	60	873	5
11.649	10231	-74	+14	76	218	1		10233	-49	+11	52	388	5
N-3	10230	-68	-10	68	194	1		10235	-59	+23	64	48	6
	10229	-39	-19	40	242	2		10235	-55	+24	62	194	1
	10229	-35	-18	37	48	6		10234	-53	+2	55	194	1
	10229	-32	-19	33	145	2		10231	-19	+15	28	315	1
	10227	-29	+18	38	194	1		10231	-17	+15	29	12	4
	(4)	(16)	(-7)		1041	13		10230	-13	-9	13	194	1
12.630	10231	-60	+14	62	303	1		10229	+13	-17	17	242	15
N-3	10230	-54	-10	54	194	1		10229	+21	-15	22	121	13
	10229	-27	-19	29	291	6		10229	+25	-17	27	582	3
	10229	-22	-18	24	194	15		10229	+27	-13	27	12	4
	10229	-17	-19	22	242	2		10227	+24	+19	35	194	1
	10227	-16	+18	30	218	1		10236	+58	-17	58	218	6
	(4)	(3)	(-7)		1442	26		10236	+62	-18	62	267	1
13.690	10233	-88	+13	88	485	1		(8)	(323)	(-7)		5187	85
W-3	10233	-79	+13	79	291	2	16.681	10233	-56	+7	57	48	8
	10234	-83	+4	83	194	1	W-4	10233	-53	+11	55	921	10
	10231	-46	+14	50	291	1		10233	-50	+9	52	194	9
	10230	-39	-9	39	194	1		10233	-48	+12	52	339	10
	10229	-12	-19	17	339	9		10233	-43	+12	47	873	8
	10229	-3	-16	10	73	15		10233	-35	+11	40	485	2
	10229	-1	-17	10	339	1		10234	-39	+2	41	170	1
	10227	-1	+18	25	206	1		10235	-47	+24	55	24	8
	10232	+65	+12	66	24	4		10235	-41	+24	51	194	1
	10232	+66	+10	68	48	1		10231	-3	+16	24	291	1
	(7)	(349)	(-7)		2484	37		10231	-2	+14	21	48	10
14.728	10233	-78	+13	78	97	1		10230	+1	-9	2	194	1
W-3	10233	-77	+15	77	630	1		10229	+27	-17	29	291	40
	10233	-75	+8	75	97	1		10229	+33	-17	35	73	13
	10233	-70	+12	72	727	2		10229	+39	-18	39	533	1
	10233	-65	+12	67	97	2		10227	+38	+18	45	194	1
	10233	-62	+13	65	388	2		10236	+71	-17	71	194	1
	10235	-70	+25	76	145	1		10236	+75	-18	75	24	5
	10234	-68	+3	68	194	1		10236	+77	-18	77	194	1
	10231	-32	+15	38	291	1		(8)	(310)	(-7)		5284	131
							17.831	10237	-87	+18	87	97	1
							N-3	10233	-42	+7	44	48	1
								10233	-38	+13	43	242	7
								10233	-37	+11	41	824	5

FEBRUARY

U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s
		$^{\circ}$	$^{\circ}$	$^{\circ}$					$^{\circ}$	$^{\circ}$	$^{\circ}$		
	10233	-33	+ 8	37	194	4	20.640	10241	-80	+ 9	80	242	1
	10233	-32	+11	37	242	6	N-2	10241	-71	+ 9	72	291	1
	10233	-27	+12	32	824	3		10240	-60	+ 4	61	121	2
	10233	-20	+11	28	388	4		10242	-54	+15	58	73	4
	10234	-25	+ 3	27	24	4		10237	-40	+17	47	97	1
	10234	-24	+ 2	26	145	1		10233	- 1	+11	18	170	6
	10235	-25	+23	40	194	2		10233	- 1	+13	20	194	1
	10231	+11	+15	25	388	1		10233	+ 2	+11	18	436	4
	10231	+12	+15	25	48	5		10233	+ 4	+11	19	291	14
	10230	+14	- 8	14	145	1		10233	+ 6	+ 9	17	242	2
	10229	+42	-15	42	242	10		10233	+11	+12	22	776	7
	10229	+53	-16	53	582	3		10233	+20	+14	28	339	4
	10229	+46	-17	46	48	3		10235	+11	+23	32	145	1
	10227	+52	+19	57	194	1		10234	+14	+ 2	16	194	1
	(8)	(295)	(-7)		4869	62		10239	+26	+ 3	27	48	1
18.690	10237	-67	+17	70	170	1		10239	+29	+ 4	32	24	1
N-3	10238	-40	- 8	40	24	2		10231	+48	+16	53	315	1
	10233	-29	+ 6	32	24	2		10230	+52	- 7	52	194	1
	10233	-28	+11	34	291	3		(10)	(258)	(-7)		4192	53
	10233	-25	+ 9	30	727	3	21.668	10241	-68	+ 8	70	170	1
	10233	-21	+ 9	26	364	8	N-2	10241	-67	+10	69	36	2
	10233	-15	+12	24	824	6		10241	-59	+ 8	61	339	1
	10233	- 8	+11	20	436	8		10240	-47	+ 4	49	121	1
	10235	-15	+23	33	194	1		10242	-42	+12	45	48	6
	10234	-13	+ 3	17	36	6		10242	-38	+12	42	73	1
	10234	-12	+ 1	15	194	1		10237	-27	+16	36	145	1
	10231	+19	+20	32	24	5		10233	+12	+ 7	18	12	1
	10231	+21	+16	31	364	1		10233	+13	+11	23	339	3
	10230	+28	- 8	28	170	1		10233	+13	+ 9	21	436	7
	10229	+55	-15	55	145	7		10233	+20	+ 8	25	194	2
	10229	+64	-17	64	533	2		10233	+24	+11	30	1067	3
	10227	+66	+19	70	194	1		10233	+32	+13	38	48	1
	(9)	(283)	(-7)		4714	58		10233	+33	+12	38	242	1
19.738	10241	-86	+10	86	194	1		10235	+21	+25	37	24	1
W-2	10240	-73	+ 5	73	170	21		10235	+24	+23	39	145	1
	10237	-54	+17	61	97	1		10234	+28	+ 2	30	170	1
	10233	-15	+11	24	145	6		10239	+41	+ 4	43	24	1
	10233	-15	+13	25	194	1		10231	+48	+16	52	48	3
	10233	-12	+11	22	582	15		10231	+61	+16	65	315	1
	10233	- 8	+ 9	18	194	6		10230	+66	- 7	66	145	1
	10233	- 5	+12	20	145	6		(10)	(244)	(-7)		4141	40
	10233	- 2	+12	19	776	7	22.722	10241	-54	+10	56	145	1
	10233	+ 6	+13	21	339	9	W-3	10241	-45	+10	48	339	1
	10235	- 2	+23	31	145	1		10240	-33	+ 5	35	97	1
	10234	+ 1	+ 3	10	24	4		10242	-29	+13	35	36	8
	10234	+ 1	+ 2	9	170	1		10242	-24	+13	31	61	2
	10239	+14	+ 3	17	73	3		10237	-13	+17	27	121	1
	10231	+35	+16	42	339	1		10233	+26	+ 7	30	12	1
	10230	+41	- 9	41	145	1		10233	+27	+10	32	436	19
	10229	+70	-15	71	97	4		10233	+33	+ 8	36	194	2
	10229	+79	-16	79	485	3		10233	+37	+11	41	291	9
	10227	+80	+19	80	121	1		10233	+41	+12	46	582	1
	(11)	(269)	(-7)		4435	92		10233	+47	+13	50	48	4
								10233	+49	+12	52	291	1

FEBRUARY

U.T.	No.	Δl	φ	ρ	A	s	U.T.	No.	Δl	φ	ρ	A	s	—
		°	°	°					°	°	°			
	10234	+41	+ 2	43	145	1		10242	+10	+13	23	97	10	
	10235	+37	+23	48	121	1		10242	+13	+13	24	97	6	
	10243	+60	+13	63	97	7		10237	+26	+17	37	73	1	
	10243	+64	+11	66	145	10		10233	+69	+11	70	24	1	
	10231	+75	+16	77	291	1		10233	+75	+10	76	339	4	
	10230	+80	- 7	80	121	1		10233	+85	+12	86	388	1	
	(10)	(230)	(-7)		3573	72		10235	+77	+23	80	97	1	
								10234	+81	+ 3	81	145	1	
23.636	10241	-40	+ 9	43	121	1		(7)	(192)	(-7)		1611	39	
N-2	10241	-31	+ 9	35	291	1								
	10240	-20	+ 5	24	242	1	26.667	10244	-68	+20	71	97	1	
	10242	-15	+13	25	48	3	N-2	10246	-28	-15	30	12	1	
	10242	-11	+12	22	61	2		10245	+ 2	- 9	3	36	1	
	10237	0	+17	25	109	1		10241	+ 9	+ 9	18	218	1	
	10233	+41	+11	46	436	10		10240	+21	+ 4	25	97	1	
	10233	+47	+ 9	50	121	1		10242	+23	+15	32	48	1	
	10233	+50	+11	53	291	6		10242	+27	+13	35	109	7	
	10233	+55	+12	56	533	1		10237	+40	+17	47	48	1	
	10233	+60	+13	62	194	2		(7)	(178)	(-7)		665	14	
	10235	+50	+23	57	194	1								
	10234	+55	+ 2	56	170	1	27.624	10244	-53	+20	59	24	5	
	10243	+74	+13	76	194	4	N-3	10248	-27	- 7	27	12	2	
	(8)	(218)	(-7)		3005	35		10246	-14	-13	14	36	2	
24.697	10241	-28	+10	33	61	1		10247	+11	-16	15	24	1	
N-2	10241	-26	+ 9	30	24	4		10245	+16	-11	16	36	2	
	10241	-18	+ 9	24	242	1		10241	+22	+10	28	242	1	
	10240	- 7	+ 4	13	121	1		10240	+33	+ 4	34	97	1	
	10242	+ 1	+13	20	145	18		(7)	(166)	(-7)		471	14	
	10237	+13	+17	27	97	1								
	10233	+55	+11	57	242	5	28.766	10249	-71	-20	71	145	1	
	10233	+61	+11	64	388	4	W-2	10244	-40	+20	47	24	3	
	10233	+69	+13	70	436	1		10248	-16	- 6	16	48	6	
	10233	+73	+14	75	291	3		10248	-13	- 6	13	24	2	
	10235	+63	+23	68	194	2		10247	+27	-16	30	24	4	
	10234	+69	+ 3	69	145	1		10245	+30	-11	30	24	2	
	(7)	(204)	(-7)		2386	42		10241	+38	+10	42	242	1	
25.633	10241	-12	+11	22	24	10		10240	+49	+ 4	51	73	1	
N-3	10241	- 5	+ 9	17	206	1		10242	+53	+15	57	6	1	
	10240	+ 1	+ 4	11	24	2		10242	+59	+13	61	12	1	
	10240	+ 6	+ 4	13	97	1		(8)	(151)	(-7)		622	22	

Mean for 26 days
 $A = 2173$, $r = 101.3$